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ABSTRACT

A professor involved with the HELDS project (Higher Education for Learning Disabled Students) discusses ways to modify instruction to accommodate students' spelling difficulties. Among methods cited are using chalkboards and quizzes to help students learn, re-explaining or presenting new concepts by using other kinds of formats or diagrams, teaching mnemonic devices, and modifying an inductive spelling program (appended) to include deductive tasks. Among other appendixes are a course syllabus and an example of a self-correcting spelling quiz. (CL)

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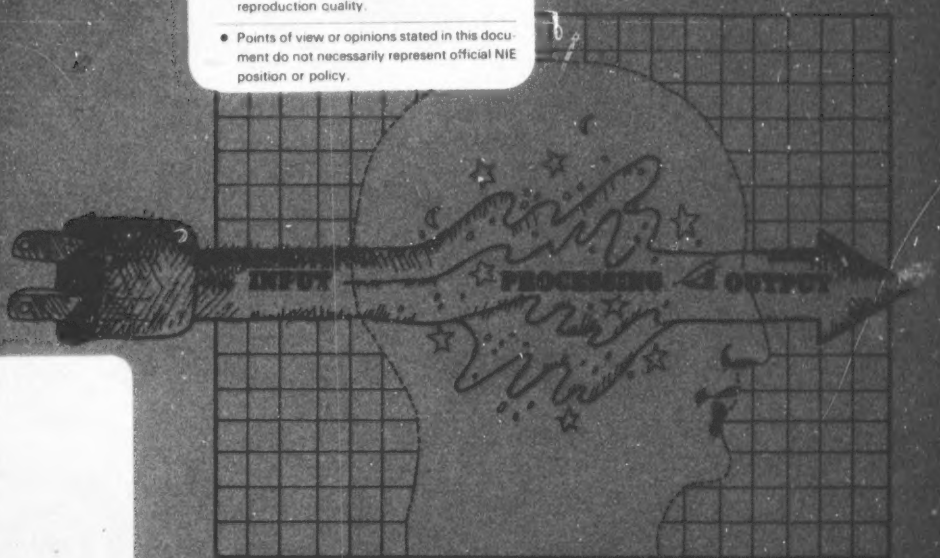
by
Cheryl C. McKernan



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THE HELD PROJECT SERIES
CENTRAL WASHINGTON UNIVERSITY

SPELLING IS AS SPELLING DOES

Alternative Techniques for Teaching Spelling to Learning Disabled Students in the University

by
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HELDS Project
(Higher Education for
Learning Disabled Students)

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THE HELDS PROJECT AT CENTRAL WASHINGTON UNIVERSITY

The acronym HELDS stands for Higher Education for Learning Disabled Students. It represents a model program funded for three years (1980-1983) by the Fund for the Improvement of Post Secondary Education (FIPSE), a division of the Department of Education. This project was funded as a model for other colleges and universities that are preparing to provide equal academic access for the learning disabled students.

Project HELDS had three major focuses. The first was to provide such access for the learning disabled student under Section 504 of the Rehabilitation Act of 1973. This we did for learning disabled students, most of whom were admitted without modified requirements to Central Washington University. These students were not provided remedial classes. They were enrolled in classes with other college students. The help that we gave was habilitative, rather than remedial, teaching them how to compensate for their weaknesses.

The habilitative training began with identification of those who were learning disabled and included, but was not limited to, such support services as taped textbooks (provided through the services of our Handicapped Student Services Coordinator), readers, writers for tests, extended time for tests, pre-registration with advising to ensure a balanced schedule, the teaching of study skills and tutoring by tutors from the campus-wide tutoring program who were especially trained to tutor learning disabled students.

The second focus of the project was to give a core of twenty faculty teaching classes in the basic and breadth areas a sensitivity to the characteristics of students who were learning disabled so that they could modify their teaching techniques to include the use of more than one modality. This ensured an academic environment conducive to learning for the LD. The faculty members participated in monthly sessions which featured experts in the field of learning disabilities, and in the area of the law (Section 504) that deals with the handicapped student and higher education. There were several sessions in which Central Washington University graduates and currently enrolled LD students shared their viewpoints and experiences with the faculty members. As a result of this some faculty members used the students as resource people in developing curricula for their various disciplines published in this series.

The third focus of the project was to make the university community aware of the characteristics of learning disabilities and of the program at Central. It also sought to encourage other colleges and universities to initiate such programs.

WHAT IS A LEARNING DISABLED STUDENT?

People with learning disabilities have handicaps that are invisible. Their disability is made up of multiple symptoms that have been with them since childhood. Many of them have been described as "dyslexics," but if they are categorized as dyslexic, this will be only one of their many symptoms, as a sore throat is only one of the many symptoms of a cold.

Three concise descriptions of the learning disabled children are provided in Hallahan and Kauffman:

"The National Advisory Committee on Handicapped Children (1968) proposed the following definition, which was adopted by the 91st Congress:

> Children with special disabilities exhibit a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written thinking, talking, reading, writing, spelling, or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual, hearing, or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantage.

Task Force II of a national project (Minimal Brain Dysfunction in Children: Educational, Medical and Health Related Services, Phase Two of a Three-Phase Project, 1969) wrote the following two definitions:

> Children with learning disabilities are those (1) who have educationally significant discrepancies among their sensory-motor, perceptual, cognitive, academic, or related developmental levels which interfere with the performance of educational tasks; (2) who may or may not show demonstrable deviation in central nervous system functioning; and (3) whose disabilities are not secondary to general mental retardation, sensory deprivation or serious emotional disturbance.
>
> Children with learning disabilities are those (1) who manifest an educationally significant discrepancy between estimated academic potential and actual level of academic potential and actual level of academic functioning as related to dysfunctioning in the learning process; (2) who may or may not show

demonstrable deviation in central nervous system functioning; and (3) whose disabilities are not secondary to general mental retardation, cultural, sensory and/or educational deprivation or environmentally produced serious emotional disturbance.[1]

Although the preceding definitions are concerned with children, the President's Committee on Employment of the Handicapped, in their booklet *Learning Disability: Not just a Problem Children Outgrow*, discusses LD adults who have the same symptoms they had as children. The Department of Education (Reference Hallahan & Kauffman) says that two to three percent of the total public school population are identified as learning disabled and that there are over fifteen million unidentified LD adults in the United States, acknowledging, of course, that people with this problem are not restricted to the United States but are found all over the world.

We know that many learning disabled persons have average or above average intelligence and we know that many of these are gifted. In their company are such famous gifted people as Nelson Rockefeller, Albert Einstein, Leonardo da Vinci, Thomas Edison, Hans Christian Anderson, Auguste Rodin, William Butler Yeats, and Gustave Flaubert.

The causes of learning disabilities are not known, but in our project each of our identified learning disabled students shows either an unusual pregnancy (trauma at birth, such as delayed delivery, prolonged or difficult delivery) or premature birth. They oftentimes have a genetic family history of similar learning disability problems.

An exerpt from my *Criterion and Behavioral Checklist for Adults With Specific Learning Disabilities* has been included as Appendix A.

/s/ MCS
6 June 1982
Ellensburg, Washington

[1]Daniel P. Hallahan and James M. Kauffman *Exceptional Children* (Englewood Cliffs, New Jersey: Prentice-Hall, 1978), pp. 121-122.

I. IF THEY CAN'T CUT THE MUSTARD, LET THEM EAT CAKE

When Students Can't Seem to Learn In the Usual Ways, What Higher Education Needs to Give Is the Best, Not Less, Instruction

You've met them a hundred times. Think back. There was the charmer. He was a nice looking young man; he seemed so pleasant whenever he came to your office to talk. He always had his wits about him whenever he came in to explain why he hadn't taken the test, or why he had missed an assignment, or what had happened that kept him from continuing in school. He was such a clever kid; you joked that maybe he'd get serious some day and really become a student. It was too bad that he left; he was such a nice sort.

How could you ever forget that other fellow? He raised such a riot across campus that everyone from the deans to the traffic control officers knew him. He took advantage of every loophole. He wheedled his way into closed classes; he pumped you for information about other instructors; and didn't he complain if an instructor wouldn't let him do extra credit projects to raise his grade. Remember thinking that if he would only direct his energy to doing the regular assigned work and studying for the tests, he wouldn't have to go through all that trouble?

Then there was that quiet, serious little girl. You always thought of her as a little girl because she always seemed to be trying to find out what you wanted. She never said anything on her own in class; she didn't seem to have any friends. She said she studied all the time, but she just couldn't do well on the tests. She did seem to be trying, but she too dropped out of school. She probably should try to find a job—something repetitive—something she could handle.

As a teacher, you feel bad about the students you don't seem to be able to reach. You think about the "ones that got away" unchanged, except for the amount of frustration they've had. Each of the student cases described had problems with school. Perhaps what is common to many of this type of student is that they have learning disabilities, a term used to describe many neurological problems. "Learning disability has come to be the general term for a variety of specific disabilities including minimal brain dysfunction, dyslexia, developmental aphasia, dysgraphia, expressive dysphasia, aural receptive dysphasia, and sequential memory disorders."[1] A learning disabled student may have any combination of these problems. The dysfunctions may come and go from one day to

[1]Lynn M. Smith, *The College Student with a Disability: A Faculty Handbook*, The President's Committee on Employment of the Handicapped, (Washington, D.C. 20210), p. 12 (Superintendent of Documents, United States government Printing Office, Washington, D.C., 1980 0-327-505: QL4)

another or even from one minute to another. This, of course, makes learning a difficult task for the student and makes teaching a less than certain task for the instructor. One moment the student may understand the material, the next moment it's gone. The frustration for the teacher is exceeded only by that for the students themselves. How maddening it must be to have an idea in your head and be unable to put it on paper. How terrible to look at a page of print and not be able to put the words or ideas in any order. Maybe it's like a stroke patient who speaks, but not the words intended.

The frustration for the learning disabled student, however, does not have to remain until the body and mind mend themselves. There are things that we teachers can do to reduce the anxiety and tension that accompany the work of the learning disabled students. As we reduce their frustration, ours may lessen too.

I, like many teachers, had doubts about students with learning disabilities. What was I supposed to do with the dyslexic student? I remember the years when dyslexia was the "in" disease and then others when it was "out." I remember hearing that dyslexia was normal and that we all outgrow it but that some people use it for an excuse not to try. I had one student, however, who was a *real* dyslexic. Everyone agreed. He got a head full of shrapnel in Viet Nam and had to relearn everything. For some reason many of us require visible scars or some medical proof before we are really convinced that students aren't just faking a learning disability. Becoming a member of HELDS, a group of college instructors working to improve Higher Education for Learning Disabled Students, has been important to me. I'm learning to recognize learning disabilities and trying to teach affected students rather than labeling them as "not college material." A learning disability is neither an excuse for the student not to learn nor for the instructor not to teach. LDs may learn differently but they can and do learn.

I'd like to cry out that I'm cured of my ignorance and insensibility toward learning disabilities, but I can't because I'm not. I've learned so much about helping the LD, and yet I often forget. I'm sometimes hurt when some teaching method works one day and draws a blank another. I even find myself wanting to categorize each LD that shows up in my classes. I know better, but I still slip. What I need to concentrate on is what may help the LDs. What can we do to teach those different but promising students?

Some of these students take advantage of extra help. The Academic Skills Center on our campus handles remedial and developmental work in composition, reading, spelling, mathematics, and reasoning. As a teacher in the Center, I have seen thousands of college students who need help with their basic skills. I have also seen hundreds for whom the help came too late or not at all. These are the students who leave school feeling frustrated and leave the instructors feeling frustrated. What we are doing now is trying to identify students who need special help as soon

as possible when they enter college. This is being done by using test scores of entering students to recommend that they seek help with basic skills. Many LD students are identified when they come for help with basic reading, writing, or math skills. Professors across campus are also referring students to student service departments for help. Again many LDs are being discovered this way. Because of the campus-wide interest in locating and helping any student who needs help, the LDs are also receiving attention.

The Educational Opportunities Program on campus conducts a tutoring program for many college courses. The Academic Skills Center conducts remedial courses and tutoring for all basic college requirements, like English 101. The Academic Skills Center and E.O.P. provide support for any academic skill or course on campus. We work together to try to provide all the support necessary for students who are having trouble with school work. In nearly every department are instructors who have worked on identifying LDs and teaching LDs. The Counseling Center is involved in the HELDS project and is available for further support. The lines of communication are open. And students may seek help from any or all of the service areas available.

II. MIGHT AS WELL SPELL, IT'S TOO WET TO PLOW

When Students are Unable to Perform the Usual Academic Skills, They May have to Study Basic Skills or Learn Compensatory Skills

Terms like *dysgraphic* and *aural receptive dysphasia* sound awful: but for the person suffering from one of these, writing or listening is a problem. For some students with learning disabilities, the problem lies in perceiving printed material; for others the problem is in writing; for another it is in listening. Any skill deficiency, however, makes succeeding in college a difficult task. But students can succeed if they learn to rely on the skills they do have to replace or enhance those they don't. A dyslexic student may concentrate on learning in lectures or from taped textbooks. A student with dysgraphia may depend on *underlining* in the text and getting lecture notes from another student in the class. Students need not ignore trying to remedy their deficiencies; they can indeed survive in college while they are developing their skills.

Many of the learning disabled students have a common problem — spelling. For those with reading problems, their perception of words may be inconsistent. For those with writing problems, their own output of written work may not be as they intended. And for those with sequential memory problems, the order of letters becomes confused. All of this leads to poor spelling, which, although common to many students, is an

embarrassment. Many students need spelling instruction. I needed spelling instruction. Perhaps remembering my own difficulties with spelling makes me more sympathetic to that problem. I remember the times on essay tests when I had to write all around an idea because I didn't know how to spell the specific word that best described my idea. Everyone in college has to write sometimes. How much easier to write when you can spell.

Because spelling is such a common problem, it has been taught at the Academic Skills Center for years. . . started as a morphographically based program to which some phonics instruction was added. This developed into the *Eidos Spelling Program* (See Appendix C) which is now used. The Eidos program teaches a combination of rules, patterns, and options for spelling sounds in English. In addition to the Eidos spelling program, the Center utilizes a tactile kinesthetic spelling program, *Spelling Techniques.* Although prepared for the one hundred ten most commonly misspelled words, this program teaches a method for learning correct spelling applicable to any word. The Academic Skills Center also uses a seven module cassette tape series of spelling instruction, *The Mechanics of Spelling*, which provides an auditory method of learning how to improve spelling.

The Center is attempting to provide spelling instruction as flexibly, and using as many learning modes as possible. Students may take traditional classes, have private tutoring, or use self-instructional materials. Spelling instruction is provided in visual, auditory, and tactile modes. Students with learning disabilities may select the one method they use best.

The spelling course, as taught in the Academic Skills Center, teaches that English spelling really is learnable. The language is not as simple to spell as some; but there are reasons, explanations, and often predictable patterns in English. The fact that some words have surprising spellings for obscure reasons doesn't mean that students should not learn the thousands of words that follow very exact patterns. Yet it is not uncommon for students to feel that learning to spell correctly is hopeless. Some even feel hostile because the language is not simple. In the spelling class we concentrate on learning the patterns that do make sense and on trying to find ways of coping with those that don't. Many college students have never had spelling instruction or have forgotten it over the years. Students with learning disabilities have an even more difficult time with spelling so, besides trying to change their attitudes towards spelling, we also try to provide the instruction in as many ways as possible. The *Eidos Spelling Program* (See Appendix C), is an inductive approach to spelling. Since LDs often have difficulty with this method, assignments and work in class must be modified with a deductive approach. The first modification is in the syllabus for the class. (See Appendix B) Although students are expected to generate the spelling rules from working with arrays of words, the LDs may become so involved or so puzzled with the words in

the arrays that they lose sight of the end, which is to recognize the pattern and how that will help their spelling. In the syllabus, therefore, I have included the definitions to be noticed and a question about the effect of recognizing a pattern in a student's spelling ability. The syliabus format was actually selected by learning disabled students. While meeting with some LDs, I asked their opinion of a couple of syllabi. They gave suggestions for making the information as clear as possible to all students. It is also important to read and explain the syllabus at the beginning of the course. Presenting the material only in written form may make its understanding almost impossible for some.

The sample pages give an example of the type of work in the Eidos program. It is necessary to back up the inductive work with a deductive explanation in class. Hopefully, students will learn one way or the other. The extra emphasis on providing instruction in as many ways as possible also helps the regular college students.

Using Chalkboards and Quizzes as Learning Tools

Among methods for adapting traditional course work to the learning disabled student is having students do "board work." Of course this is nothing new and every elementary teacher has used it. In the spelling class the ten-word self-correcting quizzes lend themselves to this kind of work. (See Appendix D) The quizzes are designed to provide a skill test with as little stress as possible. Students are asked to write a word in column one on the answer sheet. These words test patterns or rules taught in previous lessons. The student must then analyze the word and may make a second try at spelling it. After the quiz is finished, the student uncovers the answers and corrects his own work. This is great for relieving stress, but students often just glance at the correct answers and learn little from their errors. To help students think about their errors, the correcting can be done as classwork. Ten students go to the chalkboard, write the correct spelling of one of the words, show how to analyze the word, and explain their work to the rest of the class. Students are also asked to explain common misspellings of each word and how they know the correct spelling or how they remember the correct spelling. For example, if the word were "current," as in, "The current temperature is given on the weather report," the student would explain that the base is *cur*, the second *r* is added because of the twinning rule, which refers to doubling the final consonant before adding a suffix, and the suffix is *-ent* rather than *-ant* because, "The ant is on the currant bush." This last is a bit of mnemonic help for suffixes.

So that students can be successful, the instructor can let the less able spellers have first pick of which word they want to explain to the rest of the class. Although this takes class time, students benefit from the activity. Not only does the practice of explaining the spelling help, but also the

physical act of moving may help the learning. For those students with learning disabilities, walking to the board, writing on the board with chalk, standing to explain, hearing voices other than the teacher's, and seeing different hands writing might all help the learning. For those students without disabilities, the activity at least provides variety and keeps them actively involved and awake.

The value of the chalkboard as a learning tool rather than just a teaching tool became evident during some grammar sessions with a learning disabled student. He was a talker and a mover. He found it difficult to do exercises in any sort of text or practice book but enjoyed getting up to explain sentences on the blackboard. He could underline subjects and verbs, find prepositional phrases, put in punctuation marks, but only when he was working at the blackboard and talking as he did the work. After several of these sessions, he began to internalize the material and was able to begin working with pencil and paper. The learning of the material was accomplished by combining the tactile effect of the chalk and chalkboard with the moving of his body and the speaking and hearing of his own explanations. The combination worked. What is necessary is to find what combinations work for other students.

Students are assigned about ten pages in their Eidos workbooks to do for class. Before the end of class I go through the next assignment alerting students to sections which may be confusing. I also tell students to mark any problem spots with question marks in the margin. We begin each class period with questions about the assignment or questions about words they've run into during their other reading. I also note any unusual spellings I've seen in my reading. For instance, after the class has studied the twinning of the final consonant, I might ask them if Agatha Christie's spelling of jewelry as *jewellry* follows our rule. A couple of students in each class will take advantage of this open question time, the other just hope someone will ask the question they have.

After questions we quickly review what we've covered in class to date. While reviewing, I write on the chalkboard to provide the information in at least two modalities. Again, the students may use the chalkboard in reviewing. I have asked students to go to the board, write their own version of a spelling rule, give examples, and explain it to the class. Some students write their rules in sentences; others, in lists. The more variety there is, the better the chance of finding something that will make sense to each student.

The review refreshes memories enough to take the quiz. The ten-word self-correcting quiz works better early in the class period so that students have time to seriously check their work and think about the patterns on which they've been tested. If the quizzes are taken at the end of the class, students ask few questions; they just want to hand in their work, and leave. The thinking of students on our campus seems to be adjusted to the fifty minute hour. The end of the class period signals the shift in thinking to the next class or activity. The quizzes seem too important to

the learning process to be handled last. The best classes are those in which the co-operative spirit takes hold, classes in which students can ask any question and get help from anyone else without feeling that they are competing with each other. The short tests can be treated this way. The quizzes are learning tools to be used by the student and teacher to determine which concepts the students understand and which need more instruction. The tests do not determine a grade for the student. I collect and record scores on the quizzes but only for the stated reasons. All work is handed back to the student. No letter grade is given for the spelling class or any of the other remedial or developmental classes.

About Format - Lists, Diagrams and Pictures

Presenting new material and re-presenting concepts covered in the workbook is best done by re-explaining examples from the text using other kinds of formats or diagrams. For instance, when studying the effect of the accent on a syllable in determining whether the final consonant is twinned, the words in the array in the workbook are presented horizontally.

refer referring referred reference

In class I write them in a vertical list:

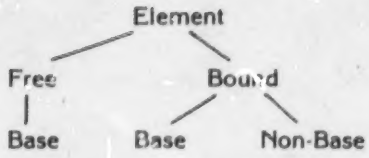
refer
referring
referred
reference

I then read the list and point out the stressed syllable:

re FER
re FER + R + ing
re FER + R + ed
REF er ence

By lining up the words differently from the book and by emphasizing the stressed syllables, the students who didn't see the pattern in the workbook may catch the idea.

Another type of diagram lends itself to spelling work. The *Eidos Spelling Program* uses terminology such as *element, base, bound,* and *free bases,* and *bound non-bases.* Explanations in the text are presented in regular print; arrays and puzzles are used for practice. In class the presentation takes a different form.



For me and for my students, this diagram clarifies and summarizes concepts essential to the Eidos program.

Still another method is used in the "I before E" packet. (See Appendix E). After students have acounted for all the categories of sounds or reasons for the spellings, there are some exceptions that are just that--exceptions. One way to remember such exceptions is to make a mental picture which contains what needs to be remembered. Some students come up with their own; but if they don't, I draw my own on the chalkboard.

[This is obviously a weird counterfeit foreign financier wearing a leisure suit seizing a heifer in a weir for the protein.] This includes enough of the exceptions to keep me straight, and it also shows students that the mental image need not be something classy to serve its purpose. These methods rely on different parts of the brain from those needed to remember the order of letters and pehaps will hit some way to make the ideas clear to both LDs and regular students.

Tricks of the Trade

There have probably been gimmicks for remembering the spelling of certain words since time (or at least writing) began. By gimmick, I mean any method which does not follow rules of spelling or rely on understanding of a word's origin or structure. Although ideally students should understand the logic and rules of spelling, it seems silly to ignore a method which might work—especially for LDs. The tricks and mnemonic devices do not replace learning to spell, but they can certainly help with some of the most commonly confused spellings or with particular spellings that elude the learner.

Mispronouncing words, although unacceptable in most situations, is very helpful when it's time to spell them. Using the British pronunciation of words such as *laboratory* and *schedule* may solve the spelling problems for many students. *Parliament* can be mispronounced /par lee a ment/ to account for those silent and unaccented letters.

Mispronunciation, of course, can also work against correct spelling. Once on one of the ten-word spelling quizzes I pronounced the word *yachtsman* /'ots' mən/. I was planning to give the students some hints for remembering, like the joking pronunciation /ya chet/ or that a yacht has to sail on a 'c' *(sea)*. But three British-trained foreign students spoke up to say that they, of course, knew the word but that it should be pronounced /yawtsmən/. Careless pronunciation also leads to mistakes like **additude* for *attitude*. Students must practice correct pronunciations and be very careful to remember that using a mispronunciation is only to help them remember the spelling.

Pronouncing *scissor* /skizer/, *pneumonia* as /pe noo mo nee a/, and *colonol* as /kol o nel/ may be enough to help students spell these correctly. Learning the Latin pronunciation of necessary /nekesary/ enabled me to keep the 'c' and 'ss' in the correct places. Some understanding of spelling patterns can, of course, make correct spelling even easier. Many people spell *conscience* by pronouncing it /con science/. This makes the word easier to spell. If, however, a little bit more is known, other words also become as easy. Once the student knows the suffixes *-ence* and *-ous*, it becomes sensible to drop the *-ence* on *conscience* and the *-ous* to get *conscious*.

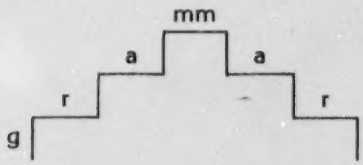
Teaching students to depend on mnemonics may not be academically sound, but the end justifies the means. The learning disabled speller may be able to remember certain kinds of clues more easily than the order of letters that some visual learners find so easy.

Creating a sentence in which the first letter of each word stands for the first letter of items in a list is frequently used by students. This type of mnemonic may seem more complicated than learning the spelling, but it works for remembering the order of letters as well as for remembering lists of items. "A rat in the house might eat the ice cream" gives us *arithmetic*. "George Evans' old grandfather rode a pig home yesterday"

is, of course, *geography*. I first learned to spell those two words using those sentences, and in thirty years I have never spelled those two words without reciting the whole sentence. One must, therefore, be cautious with this method.

One of the most useful mnemonics was taught to me by my eighth grade English teacher, Miss Keck. She said, "The ant is on the currant bush." Therefore, *current* and *currency* are spelled with the *-ent* or *ency*. The only *-ant* suffix is that which means a fruit bush. Since the suffixes *-ent, -ence,* and *-ency* are problems for all spellers, it seems necessary to teach "gimmicks" for certain words.

Some mnemonics must be personally generated, others can be taught. For the learning disabled student, some patterns are more easily learned than just a series of letters. The spelling of *grammar* became more evident to one student when we wrote it:



Knowing the difference between *lose* and *loose* requires simply counting the letters. The word *find* has four letters, and its opposite, *lose,* also has four letters. The word *tight* has five letters as does its opposite, *loose.*

Although you may be weary of this string of gimmicks, you can see that they are one of many ways to learn spelling. For the LDs, we need to find the tricks or combinations of tricks that will give them success.

I know I'm not the only person in the world who learned to spell *encyclopedia* from Jiminy Cricket. Tammy Wynette taught us "D-I-V-O-R-C-E" and Connie Francis gave us "Vacation." Unfortunately Elvis's "Confidence" never hit the charts, or everyone might be able to spell it, too. What do these have in common? Music. Music may prove to be a perfect way to teach spelling. Relying on the right brain instead of the left, usually used for verbal stuff, may be exactly what students who can't learn to spell need. I've thought about it for years but have only gotten as far as putting the base *-ceive* to "It's Got to Be Me": "It's got to be *-eive,* -ceive...," and the base *-mort* to "The Death March." The possibilities are tremendous. What we need are options, options, and more options since, at present, we can't predict what form of instruction will be beneficial to the learning disabled student.

If you have any catchy ideas for me or questions about any of the ideas or programs used here at Central, please contact me at the Developmental Learning Center, Central Washington University, Ellensburg, WA 98926. Tel. (509) 963-2151.

APPENDICES

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APPENDIX A

Criterion and Behavioral Checklist for Adults with Specific Learning Disabilities

1. Short attention span.
2. Restlessness.
3. Distractability. (The student seems especially sensitive to sounds or visual stimuli and has difficulty ignoring them while studying.)
4. Poor motor coordination. (This may be seen as clumsiness.)
5. Impulsivity. (Responding without thinking.)
6. Perseveration. (The student tends to do or say things over and over. Mechanism that says "finished" does not work well.)
7. Handwriting is poor. (Letters will not be well formed, spacing between words and letters will be inconsistent, writing will have an extreme up or down slant on unlined page.)
8. Spelling is consistently inconsistent.
9. Inaccurate copying. (The student has difficulty copying things from the chalkboard and from textbooks; for instance, math problems may be off by one or two numbers that have been copied incorrectly or out of sequence.)
10. Can express self well orally but fails badly when doing so in writing. In a few cases the reverse is true.
11. Frequently misunderstands what someone is saying. (For instance, a student may say, "What?", and then may or may not answer appropriately before someone has a chance to repeat what was said previously.)
12. Marked discrepancy between what student is able to understand when listening or reading.
13. Has trouble with variant word meanings and figurative language.
14. Has problems structuring (organizing) time -- The person is frequently late to class and appointments; seems to have no "sense of how long a "few minutes" is opposed to an hour; has trouble pacing self during tests.

15. Has problems structuring (organizing) space -- The student may have difficulty concentrating on work when in a large, open area -- even when it's quiet; may over or under-reach when trying to put something on a shelf (depth perception).

16. Has difficulty spacing an assignment on a page, e.g., math problems are crowded together.

17. Thoughts -- ideas wander and/or are incomplete in spoken and written language. Student may also have difficulty sequencing ideas.

18. Sounds -- A student's hearing acuity may be excellent, but when his brain processes the sounds used in words, the sequence of sounds may be out of order: e.g., the student hears "aminal" instead of "animal" and may say and/or write the "aminal."

19. Visual selectivity -- May have 20/20 vision but when brain processes visual information, e.g., pictures, graphs, words, numbers, student may be unable to focus visual attention selectively; in other words, everything from a flyspeck to a key word in a title has equal claim on attention.

20. Word retrieval problems -- the student has difficulty recalling words that have been learned.

21. Misunderstands non-verbal information, such as facial expressions or gestures.

22. Very slow worker -- bu may be extremely accurate.

23. Very fast worker -- but makes many errors and tends to leave out items.

24. Visual images -- Has 20/20 vision but may see things out of sequence, e.g., "frist" for "first," "961" for "691." Or, a student may see words or letters as if they are turned around or upside down: e.g., "cug" for "cup," or "dub" for "bud," or "9" for "L" for "7," etc.

25. Makes literal interpretations. You will have to have them give you feedback on verbal directions, etc.

26. Judges books by their thickness because of frustration when learning to read.

27. Has mixed dominance: e.g., student may be right handed and left eyed.

28. Moodiness -- Quick tempered, frustration.

29. Cannot look people in the eyes and feels uncomfortable when talking to others.

30. Has trouble answering yes or no to questions.

Students with specific learning disabilities which affect their performance in math generally fall into two groups:

1. Those students whose language processing (input and output) and/or reading abilities are impaired. These students will have great difficulty doing word problems; however, if the problems are read to them, they will be able to do them.

2. Those students whose abilities necessary to do quantitative thinking are impaired. These students often have one or more problems such as the following:

A. Difficulty in visual-spatial organization and in integrating nonverbal material. For example, a student with this kind of problem will have trouble estimating distances, distinguishing differences in amounts, sizes, shapes, and lengths. Student may also have trouble looking at groups of objects and telling what contains the greater amount. This student frequently has trouble organizing and sequencing material meaningfully on a page.

B. Difficulty in integrating kinesthetic processes. For example, a student will be inaccurate in copying problems from a textbook or chalkboard onto a piece of paper. The numbers may be out of sequence or the wrong numbers (e.g., copying "6" for "5"). Problems may be out of alignment on the paper. Graph paper is a must for them.

C. Difficulty in visually processing information. Numbers will be misperceived: "6" and "9," "3" and "8" and "9" are often confused. The student may also have trouble revisualizing. i.e., calling up the visual memory of what a number looks like or how a problem should be laid out on a page.

D. Poor sense of time and direction. Usually, students in the second group have the auditory and/or kinesethic as their strongest learning channels. They need to use manipulative materials accompanied by oral explanations from the instructor. They often need to have many experiences with concrete materials before they can move on successfully to the abstract and symbolic level of numbers.

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APPENDIX B

English 100.S Spelling
Class Hours:
T & Th 12:10-1:10
Room:
Lang. & Lit. 103

Instructor — Cheryl McKernan
Office — Lang. & Lit. 103C
Phone — 963-1834

Required Texts:

Eidos Spelling Books 1 & 2
by Cummings & Howard

A dictionary that includes the etymology of words is necessary. The American Heritage Dictionary is recommended; but Random House, Webster's, and others will be sufficient. These dictionaries are available for use in the library.

Grades are S or U:

S grades will be given for completion of class requirements.

Class Requirements:

1. Each student must take the pre-test in which he will be asked to spell a hundred words. The test will be corrected for the correct spelling of sounds in English and for the demonstration of the use of English spelling rules.

2. Each student must do the workbook exercises assigned for class. The workbooks must be handed in to the instructor.

3. Each student will be required to take all daily quizzes. These quizzes will be ten-word self-correcting spelling tests.

4. Each student must hand in the seven assignments and copy on notebook paper the work done in the workbook.

5. Each student must take the post-test which will be a one hundred word spelling test corrected for sounds and rules as the pre-test was.

EIDOS SPELLING PROGRAM

Date	*To be prepared for class*	*Key definitions & Concepts to be learned in class*	*Questions you should keep in mind*	*Assignment to hand in*
	Book 1, pp. 1-10	Elements base free base	How can dividing words into elements help you learn to spell the word correctly?	Summing Up, p. 9
	Book 1, pp. 11-25	freeing bound elements etymological meanings compound word stem suffix inflectional suffix derivational suffix	How can knowing bases and suffixes help you spell better? What are some suffixes that are confusing to you?	Summing Up, p. 25
	Book 1, pp. 26-31	prefixes entry words inflected forms derived forms	How can you find words in a dictionary if they aren't the main entry words?	
	Book 1, pp. 32-39		How can you learn to spell difficult words using your knowledge of prefixes, bases, and suffixes?	
	Book 1, pp. 40-45	vowel consonant analysis synthesis insertion deletion replacement long and short vowel sounds the rule of simple addition	What kind of changes may happen when we put elements together to form words?	
	Book 1, pp. 46-52	twinning final consonants vowel consonant patterns hypothesis schwa	What vowel consonant patterns exist in words where the final consonant is twinned (doubled)?	Twinning hypothesis, p. 49
	Book 1, pp. 53-63	primary stress secondary stress	How does stress affect the twinning of the final consonant? What is the best way for you to hear the stress in a word?	Summing Up, pp. 62-63

EIDOS SPELLING PROGRAM

Date:	To be prepared for class:	Key definitions & Concepts to be learned in class:	Questions you should keep in mind:	Assignment to hand in:
	i-Before-E packet	Elements long "a" sound long "i" sound	What rules can be followed to put the "i" and "e" in the right order with very few exceptions?	Hand in Book I with all exercises completed
	Book 2, pp. 1-9	vowel marker	How does the final "e" affect the previous vowel sound?	
	Book 2, pp. 10-17	consonant marker voiced sounds voiceless sounds insulating final-e	How does the final "e" affect the consonants "c", "g" and "g", and "th"? how does it affect final "v", "u", "s", and "z"?	Observations, p. 13
	Book 2, pp. 18-25		When can the final "e" be deleted?	
	Book 2, pp. 26-37	French fossil "e" Middle English Old English stress patterns Latin endings	What is an "e" deletion rule that will cover most words?	Final-e Deletion Rule, p. 37
	Book 2, pp. 38-50	assimilation	Where may there be double letters because of assimilation? Which ones may cause spelling problems?	
	Book 2, pp. 51-55	simple addition e deletion vowel consonant patterns	How does adding the suffix -ion follow rules already covered?	
	Book 2, pp. 56-63	replacement	When adding the suffix -ion, what kinds of changes occur in words? Which are most difficult to spell?	
	Book 2, pp. 64-70	Difference between /shən/ and /zhən/	How is /zhən/ usually spelled?	Summing Up, pp. 69-70

EIDOS SPELLING PROGRAM

Date:	To be prepared for class:	Key definitions & Concepts to be learned in class:	Questions you should keep in mind:	Assignment to hand in:
	Schwa Packet	Schwa sound	What can be done to figure out the spelling of the unaccented vowel?	

APPENDIX C

Another Important Process: Twinning

Earlier you saw that a word like *tapping* can be analyzed into the base **tap** plus the suffix **ing**, with a 'p' inserted between the base and suffix. We can symbolize this insertion this way:

tapping = tap + p + ing

You also saw that a word like *taping* can be analyzed as the base **tape** plus the suffix **ing**, with the 'e' in **tape** deleted. We can symbolize this deletion this way:

taping = tap**e** + ing

Analyze the words in Array #14, using the symbolization just described. In each of the sets you will find two different bases. Enter the bases in the proper column. If you get stuck, use your dictionary. Be neat, because you will be referring back to this Array for information needed in your later work. The first set is done for you:

Array #14

	ANALYSIS	BASES
shamming	sham + m + ing	sham
shaming	shame + ing	shame
shameful	shame + ful	
scrapped		
scraped		
scrapes		
matting		
mating		
mateless		
riddance		
rids		
ridable		
bidder		
biddable		
biding		
spitter		
spited		
spiteful		

snippy sniper snipes		
gammed gamy gamester		
slimmest slimly slimy		
grimmer grimness grimy		
sloppy slopy slopes		
spinner spinal spineless		
canned caned caning		
planer planeful planful		
winnable winy winery		
hatful hating hateful		
globs globate globous		

fatty		
fatal		
fateful		
pinnule		
pin		
pinny		
razzes		
razor		
razes		

OBSERVATIONS: Array #14 displays your data. The following instructions and questions can help you see the significance of this data.

Examine the words in which a letter is inserted. What is inserted in all of them?

The bases of the words in which insertion occurs all contain the same number of vowel sounds. How many vowel sounds is it? _____

Mark the inserted letter in each word with a small arrow. Then in each of them mark with a 'V' or 'C' the two letters preceding and the one letter following the inserted letter. For example:

v c c v
shamming
|

Remember:
'V' = vowel letter
'C' = consonant letter

A two-letter sequence regularly precedes the inserted letter in each word in Array #14 in which a letter is inserted. Is it VV, VC, CC, or CV? _____

What regularly follows the inserted letter? V? or C? _____

Your Twinning Hypothesis

You now have enough information, both data and observations on the data, to describe the insertions you've charted in Array #14. You can think of this description as your first try at answering this question:

Hypothesis /hī-pŏthe-sĭs/:
A Greek word that meant "a proposal or suggestion."

/e/ = schwa, the first vowel sound in words like <u>above</u>.

"When do you insert a consonant letter so as to form twin consonants between the stem and the suffix?"

A reliable answer to this question will be very valuable, because this twinning of final consonants is another of the most common and important of spelling processes.

Your first try at answering the question about twin consonants will help you continue to work with the question. This kind of tentative answer that is used to help you keep working with a question is a hypothesis.

Write your tentative answer to the question -that is, your hypothesis -below.

(36) Twinning Hypothesis: You twin the stem's final consonant when you add a suffix that begins with a vowel to a stem that has one sounded vowel (or syllable) and that ends in VC

Two Important Patterns: VCCV and VCV

Now examine the words in Array 14 in which a letter is deleted. In each of these words mark the first vowel letter with a 'V' - and then mark the next two letters either 'V' or 'C'. For example:

V C V
shaming
first vowel letter

Stress this point.

As you look over the words in Array 14, you should notice that the VCCV pattern in ***shamming*** occurs in all the words in which twinning occurs. You should also notice that the VCV pattern in ***shaming*** occurs in all the words in which a letter is deleted.

APPENDIX D

First Try:	Explanation:	Analysis: Stem + Suffix or Suffixes	Second Thoughts:
1.	govern + ment + s		
2.	attend+ance		
3.	exceed + ing + ly		
4.	peace + ful + ness		
5.	eleven + th		
6.	exhaust + ion		
7.	interest + ed + ly		
8.	disease + s		
9.	cool + ly		
10.	resist + ance		

* This test sheet is normally folded so that the answers do not show.

Name_____

Date_____ Test No._____

APPENDIX E

'I' Before 'E'

It's 'i' before 'e', except after 'c',
Or when sounded / a / as in neighbor or weigh.
Folk Wisdom

That little jingle, or at least the first line of it, is probably the best known bit of spelling wisdom around. And it can be very useful, because often 'i' and 'e' come together in a word, and you can't always remember which comes first. So if you can remember both lines of the jingle, and understand what they mean, they will help you out more often than not.

Notice that the jingle describes three different cases so far as 'i' and 'e' are concerned:

Case #1. According to the first half of line one in the jingle, which is usually the case, 'ie' or 'ei'?_____

Case #2. According to the second half of line one in the jingle, which is usual, 'cie' or 'cei'?_____

Case#3. According to the second line, how is the sound / ā / spelled, 'ei' or 'ie'?_____

It's easier to get this straight if you arrange the three cases in reverse order:

If you are spelling the sound / ā /, is it 'ei' or 'ie'?_____

If you are spelling something right after the letter 'c', is it 'ei' or 'ie'?_____

In every other case it is_____.

Any words that fit any one of those three cases are INSTANCES of the rule. Any words that do not fit into one of those three cases are EXCEPTIONS. Among the following twelve words you should find six instances and six exceptions of the 'i' before 'e' rule. Sort the words into the two groups described below:

achieve	deceit	grief	neighbor
ancient	weird	foreign	society
height	eight	herein	hygiene

Words that are instances of the 'I' before 'e' rule:	Words that are exceptions to the 'I' before 'e' rule:

As it stands, our rule is "leaky," —that is, it lets too many exceptions through. In fact, it lets so many through that you can't trust it, and a rule that you can't trust is in some ways worse than no rule at all. What we have to do is plug some of the leaks. And the way to do that is to add more details to the rule. The more detail we add, the less leaky the rule will be.

Read each of the following 48 words, pronouncing each word aloud. If you are not sure of what a word means or how it is pronounced, look it up in your dictionary. You should find nineteen words that are instances of the rule—that is, words that fit one of the three cases described earlier —and 29 words that are exceptions. Sort the words into the four groups described below:

achieved	die	grief	lie	seize	society
ancient	efficiency	heifer	neighbor	sleight	shriek
believe	eiderdown	height	neice	seismic	siege
ceiling	eight	herein	weird	conceive	therein
stein	protein	hygiene	poltergeist	surfeit	tie
conscience	feisty	financier	piece	seeing	vie
counterfeit	forfeit	kaleidoscope	relieve	sovereign	iciest
deceit	foreign	leisure	receive	science	weir

Instances of the rule with 'cei':

Instances of the rule with 'ie':

Instances of the rule with / ā / spelled 'ei':

Exceptions to the 'i' before 'e' rule:

The first detail we want to add to the rule concerns where the 'i' and 'e' are in the word. If the 'e' is in one element — say, in the base — and the 'i' is in a different element — say, in the suffix — you are not likely to get the 'e' and 'i' mixed up so long as you recognize the elements you are working with. For instance, the word *being* contains an exception to the

rule but if you recognize that the base is *be* and the suffix is *ing*, you are not likely to try spelling the word 'bieng.' So the first thing we can do is to restrict our rule to only those cases where the 'i' and 'e' come in the same element in the word, because in other cases we don't need the rule to help us out.

Go back to your list of 29 exceptions. Among them you should find nine words in which the 'i' is in one element and the 'e' is in another. Find them and write them in the nine blanks below. As you write them down, mark them off the list of exceptions. Before you start, study the following three boxes. They will acquaint you with one important base and four suffixes that will help you in your search.

THREE USEFUL SUFFIXES THAT START WITH 'E':

1. *-ent*, "doing or being" (makes adjectives)
2. *-ence*, "act or state" (makes nouns)
3. *-ency*, "quality or state" (makes nouns)

FIVE WORDS WITH THE SAME BASE

society social
sociable association
dissociate

What is the base?

Notice that the base ends with an 'i'!

SEVEN WORDS WITH THE SAME SUFFIX

financier

bombardier *hosier*

cashier *courtier*

clothier *glazier*

*What is the suffix?*_____

*Are the 'i' and 'e' in the same element?*_____

Words in which the 'i' and 'e' are in different elements:

_____ _____ _____

_____ _____ _____

_____ _____ _____

Be sure you cross these nine off of your list of exceptions on page 2. Now we can revise our 'i' before 'e' rule to take into account this new detail, making the rule less leaky:

WITHIN A SINGLE ELEMENT it is always 'i' before 'e', except after 'c',
Or when sounded / ā /, as in neighbor or weigh.

The original jingle makes a special case of words in which 'ei' spells / ā /. We are going to look now at words in which 'ei' and 'ie' spell /ī/. You should find eight such words on page 2 among those left in your list of exceptions and four of them among your list of instances with 'ie'. Find them and sort them into the two groups described below. As you do so, cross them off of your lists on page 2.

Words with /ī/ at the Beginning or Middle	Words with /ī/ at the End

Fill in the blanks:

When the sound /ī/ is at the end of a word, is it spelled 'ie or 'ei'?_____

When the sound /ī/ is at the front or in the middle of the word, is it spelled 'ie' or 'ei'?_____

Now we can add another detail to our 'ī' before 'e' rule, thus closing another leak:

> Within a single element it is always 'i' before 'e' except after 'c'
> Or when sounded /ā/ as in *neighbor* or *weigh*
> *OR WHEN SOUNDED /ī/ AT THE FRONT OR IN THE MIDDLE OF A WORD.*

It doesn't rhyme so well now, but it doesn't leak so much either. In fact, it has only around a dozen actual exceptions.

Here are some special cases to look at:

Either and *neither*. Some people pronounce these with an /ē/ sound, some pronounce them with /ī/. Since they CAN be pronounced with an /ī/ spelled 'ei' at the front or in the middle, they are instances of our revised rule.

Inveigle or *sheik*. Each of these two words also has two accepted pronunciations. Since each CAN be pronounced with an /ā/ spelled 'ei', they are also instances of our rule.

Their and *heir*. In most parts of the country the 'ei' in these two can be accurately described as /ā/. The /r/ coming right after changes the /a/ somewhat, but for our purposes we can still treat these as two more instances in which / ā / is spelled 'ei'.

Fiery and *heirarchy*. Now these two ARE exceptions and there is not much we can do except remember them. *Fiery* is clearly *fire* + y, which ought to be 'firy.' But hundreds of years ago there was much indecision about how to spell both *fire* and *fiery*. Apparently the spelling of *fiery* is based on a common earlier spelling of *fire as 'fier.' Hierarchy* (as well as all the other *hier* — words like *hieroglyphics)* simply comes from a Greek word *ieros*, meaning "sacred." Not much help there, except to remember that as you move up a hierarchy you get *hi*gher.

Look at your list of exceptions on page 2. Among them you will find three words that all contain the same base, a base that contains the 'ei' spelling. What are the words? _____, _____, and _____. And what is the base? _____. If we remember one of the words, we've accounted for all three. Pick one and cross the other two off of your list of exceptions.

Now there should be only twelve exceptions. The first two are *fiery* and *hierarchy*. The other ten ought to still be there on your list of exceptions on page 2. Remember to include just one of the three words with the base *feit*. Finish the list:

Hard Core Exceptions to the 'I' Before 'E' Rule:

fiery		
hierarchy		

Twelve exceptions is not too many for a rule that has as many instances as your revised 'i'-before-'e' rule. But if you want to try a bit of memory work, you might use a technique from the mnemonics experts:

Make up a little scene that can be described in one or two sentences that contain all twelve exceptions. Get the picture of the little scene clearly in your mind. Here's an example of a little scene:

> A strange looking old gent with flashing eyes and a tall silk hat is grabbing a young cow alongside a small dam in a small creek while the king and his court snooze away.

The sentence, that describes this picture and contains the twelve exceptions is:

> "The *weird foreign financier* with *fiery* eyes and no taste for *counterfeit protein seized* the *sovereign's heifer* beside the *weir* as the *hierarchy* took their leisure."

Not great prose — but it does help the memory. Try your own scene — try for one that includes all the exceptions, including at least one word with the base *feit*.

_____

_____

_____

_____

Now go over these pages dealing with the 'i' — before 'e' rule and rewrite the rule so that it has no more than the twelve exceptions we worked it down to. Try to make your statement of the rule as short and clean as you can. And if you can make it rhyme, so much the better!

The New Revised 'I'-Before-'E' Rule: _____

_____

_____

_____

_____

_____

_____

_____

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